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(71)Applicant : NEC SAITAMA LTD

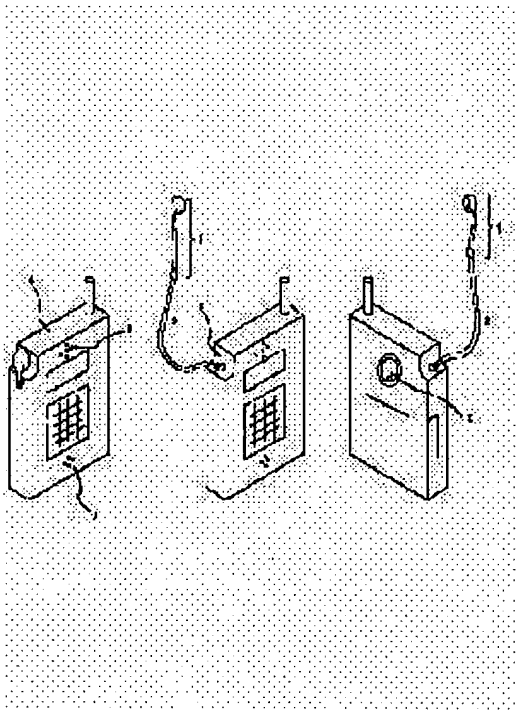
(72)Inventor : ICHIKAWA KAZUO

(54) PORTABLE TELEPHONE SET

(57)Abstract:

PROBLEM TO BE SOLVED: To make response at the time of reception easy and to improve portability of an earphone microphone.

SOLUTION: A portable telephone set body has an earphone microphone storage part 8 for an earphone microphone 1, a connection cable winding part 9 for winding up a connection cable 2 and storing it, an earphone microphone state detection part, a changeover switch and a control part attached. If the earphone microphone 1 stored in the earphone microphone storage part 8 is pulled out from the portable telephone set body 4 when there is an incoming call with the earphone microphone 1 and the connection cable 2 stored in the body, the earphone microphone state detection part detects that and this detection signal is transmitted to the control part. The control part switches a voice communication path of the portable telephone set to the earphone microphone 1 side and, at the same time, performs an off-hook operation and starts the communication operation even without a communication button pushed down.



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* NOTICES *

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CLAIMS

[Claim(s)]
[Claim 1] The portable telephone characterized by having an earphone microphone, the interconnection cable and connecting means which connect this earphone microphone to said body of a portable telephone electrically, and the earphone microphone stowage formed in said body of a portable telephone in a portable telephone with the transmission section and the receiver section.
[Claim 2] The portable telephone according to claim 1 characterized by having the interconnection-cable rolling-up section for containing said interconnection cable on said body of a portable telephone, and pulling it out from said body of a portable telephone.
[Claim 3] Said connecting means is a portable telephone according to claim 1 characterized by having the circuit changing switch changed to the earphone microphone condition detecting-element [which detects whether said interconnection cable is pulled out from said body of a portable telephone, or it is contained by said body of a portable telephone], and transmitter/receiver part side in which the voice grade channel of said portable telephone is contained by said earphone microphone side or said body of a portable telephone according to the detection result of said earphone microphone condition detecting element.
[Claim 4] The portable telephone according to claim 3 characterized by having the control means which controls said portable telephone in the input standby condition of the off-hook signal by the message carbon button depression while controlling said circuit changing switch to arrival when said earphone microphone and said interconnection cable are pulled out from said body of a portable telephone to change the voice grade channel of said portable telephone to an earphone microphone side.
[Claim 5] The portable telephone according to claim 3 characterized by having answered the actuation which pulls out said interconnection cable from said body of a portable telephone to arrival when said earphone microphone and said interconnection cable are contained by said body of a portable telephone, and having the control means which performs off-hook processing of said portable telephone while controlling said circuit changing switch to change the voice grade channel of said portable telephone to an earphone microphone side.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the portable telephone equipped with the message means especially with an earphone microphone about the portable telephone which has the transmission section and the receiver section.
[0002]
[Description of the Prior Art] As a conventional portable telephone, as shown in drawing 4 , what was constituted so that an earphone microphone could be connected to the jack of the body of a portable telephone disengageable is known. In drawing 4 , it can talk over the telephone by the earphone microphone's 1 having the interconnection cable 2 and the plug 3, and inserting a plug 3 in the jack 5 of the body 4 of a portable telephone, connecting the earphone microphone 1 and the body 4 of a portable telephone, applying an earphone part to a lug, and arranging a microphone part to the regio oralis, without having the body 4 of a portable telephone by hand.
[0003] When talking over the telephone without using an earphone microphone, it can talk over the telephone using the transmission section 7 and the receiver section 6 which are built in the body of a portable telephone. Moreover, in case the body 4 of a portable telephone is put in into a pocket or a bag and is carried, storability and portable improvement are aimed at by removing a plug 3 from a jack 5 and separating the earphone microphone 1 with the body 4 of a portable telephone.
[0004] Moreover, what built only the earphone microphone in the body of a portable telephone instead as a portable telephone which has improved the storability of the earphone microphone 1 and portability, without forming a telephone transmitter and an earphone is known (for example, refer to JP,3-258061,A or JP,4-14323,A).
[0005]
[Problem(s) to be Solved by the Invention] Said conventional portable telephone which constituted the earphone microphone removable Since a telephone transmitter and an earphone, and an earphone microphone with a built-in body of a portable telephone can be used properly if needed and an earphone microphone and the body of a portable telephone can be separated and contained While storability is good, the body of a portable telephone and an earphone microphone must be connected each time, or it must dissociate, and the actuation is troublesome, and a possibility of losing an earphone microphone also has it, and there is a problem in respect of operability and storage.
[0006] Moreover, in the portable telephone which contained and substituted only for the earphone microphone, since the user had to hold the body of a portable telephone by one hand and another hand had to draw out the earphone microphone from the body with the earphone microphone section further when a portable telephone had arrival of the mail, it was what cannot answer a telephone immediately and cannot be said to be not necessarily user-friendly.
[0007] Furthermore, in case it talks over the telephone with a portable telephone using the earphone microphone of said conventional portable telephone, [whether the plug of an earphone microphone is inserted in the jack of the body of a portable telephone and] Or after carrying out actuation of pulling

out an earphone microphone from the body of a portable telephone It was what it must talk over the telephone by performing off-hook actuation of carrying out the depression of the message carbon button, and the actuation process increases compared with the case where it talks over the telephone using the transmission section of the body of a portable telephone, and the receiver section, and spoils a user's convenience.

[0008] The purpose of this invention is either of an earphone microphone being able to telephone to the transmission section of the body of a portable telephone, and the receiver section, and being able to plan receipt of an earphone microphone, and the facilities of a cellular phone in view of the above-mentioned trouble, and offering further, the portable telephone which can prevent loss of an earphone microphone, while raising the operability at the time of using an earphone microphone.

[0009]

[Means for Solving the Problem] When it has the transmission section and the receiver section, and a rolling-up-type earphone microphone, and this earphone microphone is pulled out and used from a portable telephone at the time of earphone microphone use and an earphone microphone is not used, the portable telephone of this invention is constituted so that an earphone microphone can be contained on the body of a portable telephone.

[0010] Furthermore, when an earphone microphone is pulled out, it is characterized by building in the switch automatically changed from a headset with a body built-in [the voice grade channel of the body of a portable telephone] to an earphone microphone.

[0011] It specifically has the composition of having connected the earphone microphone and the interconnection cable to the body of a portable telephone beforehand, and further, when not using an earphone microphone, it has the structure of having the stowage which contains the rolling-up section and the earphone microphone for containing an earphone microphone and an interconnection cable inside the body of a portable telephone.

[0012] When there is arrival of the mail in the condition of having contained the earphone microphone and the interconnection cable on the body of a portable telephone, off-hook actuation can be performed by pushing a message carbon button like before, and it can telephone to a partner using the transmission section and the receiver section which are built in the body of a portable telephone. Moreover, when it is going to telephone to a partner using an earphone microphone at the time of arrival of the mail, it has composition which the switch which changes a voice grade channel from the transmission section and the receiver section of the body of a portable telephone to an earphone microphone by pulling out the earphone microphone contained changes, and changes to the talk state which uses an earphone microphone. Moreover, if an earphone microphone is pulled out in the condition of talking over the telephone using the transmission section and the receiver section of the body of a portable telephone, a voice grade channel will change to an earphone microphone side automatically.

[0013] In this invention, since off-hook actuation is performed and message actuation is started by pulling out an earphone microphone from the body of a portable telephone at the time of arrival of the mail while a voice grade channel changes from the transmission section and the receiver section of the body of a portable telephone to an earphone microphone, it can shift to a talk state quickly from arrival of the mail. Moreover, when the earphone microphone is already pulled out from the body of a portable telephone at the time of arrival of the mail, since the voice grade channel has changed from the transmission section and the receiver section of the body of a portable telephone to the earphone microphone side, off-hook actuation is performed by carrying out the depression of the message carbon button, and it can shift to a talk state immediately.

[0014] Moreover, when not using an earphone microphone, an interconnection cable can be contained on the body of a portable telephone, and the outstanding storability and the outstanding portability are secured. Furthermore, when it is in the condition that the earphone microphone is contained and there is arrival of the mail, the voice grade channel is changed to the transmission section and the receiver section of the body of a portable telephone, off-hook actuation can be performed by carrying out the depression of the message carbon button, message actuation can be started, and the same usage as the conventional portable telephone can be carried out.

[0015]
[Embodiment of the Invention] Drawing 1 is the external view in which showing the gestalt of operation of the portable telephone of this invention, and showing the condition of having pulled out the condition and earphone microphone which contained the earphone microphone. Drawing 2 shows the circuit diagram of the built-in transmitter/receiver part in the portable telephone of this invention, and the changeover switch section of an earphone microphone, and drawing 3 is a flow chart which shows the actuation at the time of the arrival in the portable telephone of this invention.
[0016] In drawing 1 , the same number as drawing 4 shows the same thing. This invention is equipped with the earphone microphone stowage 8 which contains the earphone microphone 1, the interconnection-cable rolling-up section 9 which rolls round and contains an interconnection cable 2, the earphone microphone condition detecting element 10, the circuit changing switch 11, and the control section 12.
[0017] Next, actuation of this invention is explained with reference to drawing 1 - drawing 3 . A control section 12 is changed into the input standby condition of the off-hook signal by the message carbon button depression while it controls a circuit changing switch 11 and changes a voice grade channel to the earphone microphone 1 side, when the condition detecting signal from the earphone microphone condition detecting element 10 is supervised, a portable telephone has arrival of the mail, and the earphone microphone 1 is already pulled out from the earphone microphone stowage 8 of the body 4 of a portable telephone. And if a message carbon button is pushed, off-hook will be carried out and message actuation will be started.
[0018] moreover, when there is arrival of the mail in the condition that the earphone microphone 1 and the interconnection cable 2 are contained by the body The signal which shows that the earphone microphone 1 is contained from the earphone microphone condition detecting element 10 is sent out to a control section 12. A control section 12 is changed into the input standby condition of the off-hook signal by the message carbon button depression while it controls a circuit changing switch 11 in response to this signal and changes a voice grade channel to the transmission section 7 and the receiver section 6 of the body 4 of a portable telephone.
[0019] If a message carbon button is pushed in this input standby condition, an off-hook signal will be inputted and message actuation will be started. It is detected that the interconnection cable 2 currently rolled round by the interconnection-cable rolling-up section 9 was pulled out, and the earphone microphone was pulled out by the earphone microphone condition detecting element 10 in this input standby condition on the other hand when the earphone microphone 1 contained by the earphone microphone stowage 8 was pulled out from the body 4 of a portable telephone. Processing of off-hook actuation is performed, and if this detecting signal is sent to a control section 12, even if a control section 12 does not have the depression of a message carbon button, it will start message actuation, while it controls a circuit changing switch 11 and changes a voice grade channel from the transmission section 7 and the receiver section 6 of the body 4 of a portable telephone to the earphone microphone 1 side.
[0020] Moreover, if the earphone microphone 1 is pulled out while talking over the telephone using the transmission section 7 and the receiver section 6 of the body 4 of a portable telephone, the earphone microphone condition detecting element 10 will detect this, a circuit changing switch 11 will be controlled, and the path of a sound signal will be automatically changed to the earphone microphone 1 side. If an interconnection cable 2 is rolled round and the earphone microphone 1 is contained to the earphone microphone stowage 8 on the contrary while talking over the telephone using the earphone microphone 1, the path of a sound signal will change to the transmission section [of the body 4 of a portable telephone] 7, and receiver section 6 side automatically.
[0021] Therefore, according to this invention, the response actuation at the time of arrival of the mail becomes easy, and the transmission section and the receiver section, and an earphone microphone with a built-in body can be used properly suitably, and user-friendliness becomes good. Furthermore, when not using the time of un-using [of a cellular phone] it, or the earphone microphone 1, an interconnection cable 2 is contained in the interconnection-cable rolling-up section 9 of the body 4 of a portable

telephone, the earphone microphone 1 can be contained to the earphone microphone stowage 8, and the outstanding storability and the outstanding portability are secured.
[0022]
[Effect of the Invention] Since this invention is off-hook and can perform message actuation by pulling out the earphone microphone contained by the body of a portable telephone, it can shift to the talk state using an earphone microphone in easy actuation to talk over the telephone using an earphone microphone in the case of arrival of the mail.
[0023] moreover, since the interconnection cable of an earphone microphone can be rolled round and contained in the interconnection-cable rolling-up section inside the body of a portable telephone while being able to perform message actuation like the conventional portable telephone, when not using an earphone microphone, the portability of an earphone microphone and storability are markedly alike, and improve.
[0024]

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TECHNICAL FIELD

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PRIOR ART

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[0003] When talking over the telephone without using an earphone microphone, it can talk over the telephone using the transmission section 7 and the receiver section 6 which are built in the body of a portable telephone. Moreover, in case the body 4 of a portable telephone is put in into a pocket or a bag and is carried, storability and portable improvement are aimed at by removing a plug 3 from a jack 5 and separating the earphone microphone 1 with the body 4 of a portable telephone.
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